

## Glossary of Terms

### Age determination notation

- 5 Five annuli counted (only one clear interpretation)
- 5(6) Probably five, but possibly 6 annuli (moderately difficult to age, two interpretations possible)
- 5? Five annuli is the best estimate (difficult to age, more than two interpretations possible)
- 5+ Five annuli counted with an additional seasonal growth increment

**Annulus** Any zone which forms once each year, usually the "winter" growth zone which marks the end of a year of growth.

**Bivalve terminology for age determinations** See figures 9 (p. 13) and 11 (p. 13).

**Check** Zone of slow "winter" type growth which is not a true annulus. Such rings are distinguished by the width of the zone relative to annuli, location relative to annuli, and incomplete formation or poor definition. Checks may also be differentiated from annuli on some scales by differences in platelet shape.

**Chondrophore** "Pit or large spoon-shaped form projecting from the hinge plate, usually supplemented by a prop extending to the surface of the valve"<sup>1</sup>

**Circulus** A concentric ridge formed on a scale by the periodic addition of material to the edge of the basal plate. The circuli on scales may be continuous or segmented by the scale radii, in which case the individual segments are termed platelets. Circuli are formed only on the outer surface of the scale; the inner surface is smooth. Circuli formed on bivalves are concentric, scalloped ridges which become crowded together at an annulus.

**Collum** Interruption in the sulcus acusticus which marks the location of the nucleus (Fig. 5, p. 12).

**Crystallized otolith** An otolith displaying inadequate calcification (Fig. 19, p. 15). An age determination is not possible because of missing annuli.

**Ctenoid scale** Type of scale having ctenii, or spine-like projections resembling the teeth of a comb, on its posterior edge.

**"Cutting over"** ("crossing over," erosion marks) Disruption of the circulus pattern on scales from erosion of the edge results in circuli formed after erosion that appear to intersect or "cross over" others that had been formed earlier. If scale edge erosion is an annual event, the "cutting-over" marks may be used to detect annuli.

**Cycloid scales** Scales that are oval or elliptical in shape.

**Edge** Outer periphery of the age structure.

**Edge type** Summer/winter or opaque/hyaline deposition occurring on the outer edge of the age structure representing the most recent growth.

**End of annulus** Outermost edge of a winter growth zone designated as an annulus.

**False annulus** Sometimes used synonymously with "check," refers to a zone of slow growth that is not counted as an annulus; also, a characteristic check ring on scales or otoliths which occurs before the first annulus and fairly close to the focus (scales) or nucleus (otoliths).

**Focus** Center or origin of a scale.

**Hinge** "Interlocking toothed devices in a bivalve; hinge plate is the dorsal margin carrying the hinge teeth; hinge teeth are interlocking teeth that unite the valves" (Arnold 1965). Annuli occurring in the hinge teeth may correspond in number and relative location to annular lines seen in the valves of molluscs.

**Hyaline** Zone that allows the passage of light (also referred to as translucent). On otoliths, the "hyaline" zone is composed primarily of organic material (otolin) with a reduced amount of inorganic material in the form of short, thin calcium aragonite needles. With transmitted light, hyaline zones appear bright; with reflected light, they appear dark. "Winter" zones are normally composed of hyaline material.

**Lumen** Central cavity of a spine.

**Margin** Edge of a valve. The ventral valve margin of a bivalve is often referred to, since it represents the most recent accretion of shell growth.

**Nucleus** Central portion of an otolith; sometimes used synonymously with the terms core, kernel, or primordium.

**Opaque** Zone that inhibits the passage of light. On otoliths, the "opaque" zone is composed primarily of inorganic calcium aragonite needles which are long and thick relative to those formed in hyaline zones. With transmitted light, opaque zones appear dark; with reflected light, they appear bright. "Summer" zones are normally composed of opaque material.

**Otolith terminology for age determinations** See figures 5 (p. 12) and 20 (p. 16).

**Platelets** Individual segments of a circulus on some types of scales which are separated by the scale radii.

**Regenerated scale** Scale which replaces one previously lost. These cannot be used for age determination because the central area has no circuli or annular growth features (Fig. 18, p. 15).

**Sagittae** Largest of three pairs of otoliths located in the sacculus of the inner ear of a fish; referred to simply as "otoliths" in the following sections.

**Settling check** Characteristic check ring on some marine ground-fish otoliths. It occurs just outside the nucleus and is believed to form when the fish first become benthic in habit.

**Shifted otolith** Otolith which has moved in the sacculus; recognized by additional growth occurring along a different axis from previous growth. Annuli may thus be present only on certain parts of a shifted otolith, and absent on other parts. Shifting often occurs in conjunction with crystallization of an otolith.

**Split** Discontinuity in an annular zone, analogous to a "check." This causes the annulus to appear as two or more closely spaced "winter" zones.

**Sulcus acusticus** (referred to simply as "sulcus" in the following sections) Longitudinal groove extending down the convex surface of an otolith (Fig. 5, p. 12).

**Umbo** "That point of a bivalve situated immediately above the hinge, the beak, the first formed part of a bivalve" (Arnold 1965) [(See figures 9 (p. 13) and 11 (p. 13)].

**Valve** "One of the separable portions of a shell; bivalve, a shell in two sections" (Arnold 1965).

<sup>1</sup>Arnold, W.H. 1965. A glossary of a thousand-and-one terms used in conchology. *Veliger* 7 (Suppl.), 50 p.